PEACE/WILLISTON
FISH & WILDLIFE
COMPENSATION
PROGRAM

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BRITISH
COLUMBIA

# A Reconnaissance Survey Of Teegee Lake

M. J. Hunter
March 1997

PWFWCP Report No. 141

105-02893/

The Peace/Williston Fish & Wildlife Compensation Program is a cooperative venture of BC Hydro and the provincial fish and wildlife management agencies, supported by funding from BC Hydro. The Program was established to enhance and protect fish and wildlife resources affected by the construction of the W.A.C. Bennett and Peace Canyon dams on the Peace River, and the subsequent creation of the Williston and Dinosaur Reservoirs.

**Peace/Williston Fish and Wildlife Compensation Program, 1011 Fourth Ave. 3rd Floor, Prince George B.C. V2L 3H9**

Website: *www.bchydro.bc.ca/environment/initiatives/pwcp/*

This report has been approved by the Peace/Williston Fish and Wildlife Compensation Program Fish Technical Committee.

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# A RECONNAISSANCE SURVEY OF

# TEEGEE LAKE

| | |
|---|---|
| **WATERSHED:** | **Williston Reservoir (Finlay Reach)** |
| **DATE OF SURVEY:** | **June 28 - 29, 1996** |
| **FIELD CREW LEADER:** | **Mark Hunter** |
| **FIELD ASSISTANT:** | **Karin Mathias** |
| **REPORT PREPARED BY:** | **Mark Hunter** |

**BRITISH COLUMBIA CONSERVATION FOUNDATION**

**PEACE / WILLISTON FISH AND WILDLIFE COMPENSATION PROGRAM**

**B. C. MINISTRY OF ENVIRONMENT, LANDS AND PARKS**

**FUNDED BY: FOREST RENEWAL BRITISH COLUMBIA**

RELEASED BY:

D. J. Cadden, Regional Fisheries Biologist

**LAKE: Teegee Lake** **SYSTEM NAME: Omineca River**

**A.S.A.P. REFERENCE NO.:** **WATERSHED CODE: 238-4856-138-234**

**DATA ON FILE FOR THIS SURVEY**

| | | | |
|---|---|---|---|
| Location | X | Dissolved 02 / Temp. Profiles | X |
| Physical Data | X | Winter Dissolved 02 / Temp. Profiles | -- |
| Bench Mark | X | Netting Record | X |
| Terrain Features | X | Lake Catch Summary | X |
| Access | X | Individual Fish Data | X |
| Resorts and Campsites | X | Fish Preserved | -- |
| Other Developments | X | Stomach Analysis | X |
| Obstructions and Pollutions | X | Scale Reading | X |
| Special Restrictions | X | Location of Inventory Sites | X |
| Aquatic Plants | X | Photograph Directory | X |
| Wildlife Observations | X | Appendices | |
| Miscellaneous Comments | X | A: Water Chemistry Analysis | X |
| Lake Drainage | X | B: Tributary Stream Data | X |
| Fisheries Management Comments | X | C: Fish Scale Analysis | X |
| History of Previous Surveys | X | Bathymetric Map Reduction | X |
| Water Chemistry Summary | X | Bathymetric Map | -- |

LOCATION

Location: approximately 157 km WNW of Mackenzie

| | | | |
|---|---|---|---|
| Elevation: | 825 m ± 25 m | U.T.M.: | 10.343832.6178557 |
| Latitude / Longitude: | 55°43'39" 125°29'12" | N.T.S. Map No.: | 93 -NI 11 |
| Management Unit: | 7-38 | Biogeoclimatic Zone: | Boreal White and Black Spruce |
| Ecoprovince: | Sub-Boreal Interior | Ecoregion: | Omineca Mountains |
| Ecosection: | Southern Omineca Mountains | | |

Drainage: Unnamed C. --> Teegee C. --> Silver C. --> Omineca R. --> Williston Reservoir (Finlay Reach - Omineca Arm) --> Peace R.

**PHYSICAL DATA**

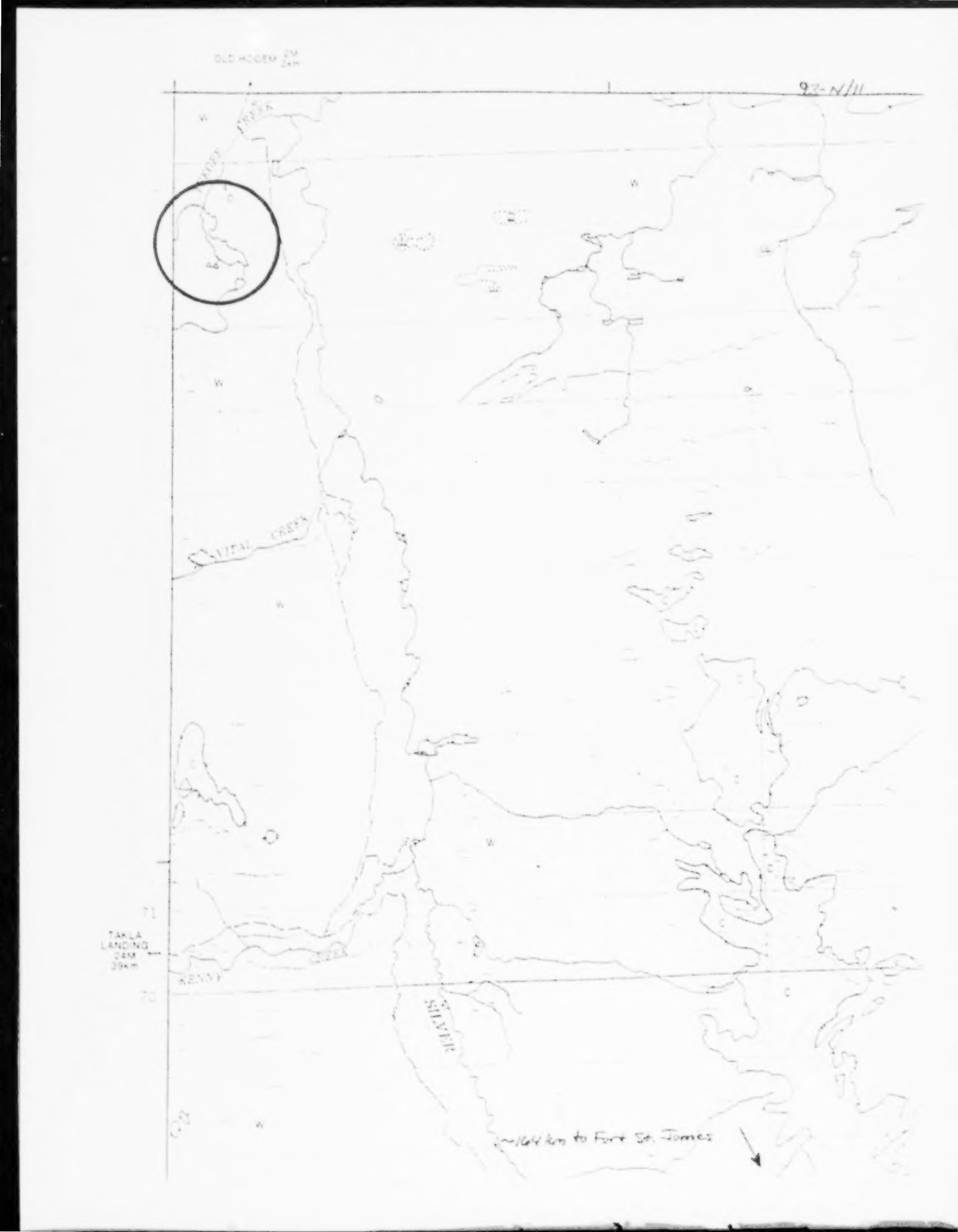
| | | | |
|---|---|---|---|
| Lake Drainage Area: | 9.4 $km^2$ | Volume: | 115 942 $m^3$ |
| Water Surface Area: | 94 449 $m^2$ | Perimeter of Islands: | 0 m |
| Area Above 6 m Contour: | 94 449 $m^2$ | Number of Islands: | 0 |
| Shoreline Perimeter: | 2 326 m | Mean Depth: | 1.3 m |
| Maximum Depth: | 10.0 m | Secchi Reading: | 5.45 m |
| Filterable Residue (TDS): | 120 mg/L | | |

Sounding Device: Lowrance X-15 Elevation Source: Contour Interpolation

**BENCHMARK**

(Iron spike, center of red circle) located 2.0 m above present water level in a 23 cm diameter spruce that is 3.0 m from the present water's edge and located beside Inlet # 8 (Plate # 5).

High Water Mark: 0.05 m above water level at time of survey


OLD HOGEM 2M 2MM
93-N/11
CREEK
CREEK
CREEK
CREEK
TAKLA LANDING 24M 39MM
KENNY
SHAVER
km to Fort St. James

**LAKE: Teegee Lake**

**TERRAIN FEATURES**

**Immediate Shoreline:**

Teegee Lake is almost entirely surrounded by a marsh, except for a small part located in the narrow section of the lake between the two main bays. The marshes are comprised predominately of sedge grasses, with alders growing along the backside of the marsh. Lodgepole pine trees grow behind the alders along the north side of the lake, while spruce trees grow behind the alders along all other sides. The land rises at a moderately steep rate away from the lake's edge once past the marsh front.

From the shore's edge into the lake, the silt and organic covered bottom has a shallow slope. Two exceptions to this are found along the northeast side of the south bay, and along the south side of the north bay; the substrate in these areas is comprised of gravels covered by a thin layer of silt. There is some blow down in the water along most of the lake's edge. As well, two beaver huts are found on the lake: one on the south shore and the other on the west shore of the south bay.

**Surrounding Country:**

The forest to the north of Teegee Lake is predominately lodgepole pine on relatively flat terrain. On all other sides of the lake, the surrounding forest is dominated by spruce trees growing on low, rolling hills. Mountains are located in the distance to the northwest and northeast of the lake. Teegee Lake is situated within the Boreal White and Black Spruce biogeoclimatic zone.

**LAKE: Teegee Lake**

## ACCESS

**Directions:**

From the junction of Highway 27, the Teardrop Forest Service Road and the Germansen Landing North Road, drive west on the Teardrop Forest Service Road for approximately 40 km. Turn right on to the Leo Creek Forest Service Road, and proceed north for approximately 68 km. Turn right on to the Driftwood Forest Service Road and continue north for approximately 56.5 km, then turn right and travel for approximately 6.5 km on the Fall-Tsayta Forest Service Road. Turn right again at the sign indicating the Tsayta Lake Lodge, and drive for approximately 5 km to the Tsayta Lake Lodge. From the lodge, Unnamed Lake is approximately a 31 km helicopter ride to the north.

**Road Type and Conditions:**

All four of the Forest Service Roads are well-maintained, two-lane gravels roads that can easily be driven with a two-wheel drive vehicle during the summer. The road between the Fall-Tsayta Forest Service Road and the Tsayta Lake Lodge is a one-lane gravel road that can be driven with a two-wheel drive vehicle during the summer.

**Restrictions:**

None.

## RESORTS AND CAMPSITES

There are no resorts or campsites located on Teegee Lake.

## OTHER DEVELOPMENTS

None.

## OBSTRUCTIONS AND POLLUTIONS

There is a 0.6 m high beaver dam located at the mouth to the outlet right at the lake's edge which could hinder upstream fish movement.

**LAKE: Teegee Lake**
**SPECIAL RESTRICTIONS**

None.

**AQUATIC PLANTS**
The following aquatic plants were identified during the time of the survey:

| | |
|---|---|
| sedge grasses | Equisetum sp. |

**WILDLIFE OBSERVATIONS**

The following wildlife or signs were seen during the time of the survey:

| | |
|---|---|
| 1 muskrat | 1 red squirrel |
| various song birds | 2 beaver huts |
| woodpecker | bear scat |

**MISCELLANEOUS COMMENTS**

1) The large marsh located on the west side of the south bay is dry enough to provide fair helicopter landing.

2) The majority of Teegee Lake has a shallow depth -fish could easily be seen swimming in most areas of the lake.

3) Bathymetric map: The lake outline was drawn from an enlargement of air photo 30 BCB 90091: No. 279, flown on July 25, 1990.

**LAKE: Teegee Lake**

**LAKE DRAINAGE**

**General:**

Teegee Lake is fed by nine inlets, seven of which go underground within the first 50 m upstream of the lake. The outlet creek drains Teegee Lake to the north, and flows for approximately 50 m before it's confluence with Teegee Creek. Teegee Creek flows east for an additional 2 km to join with Silver Creek. Silver Creek runs for approximately 5.6 km to the north before it merges with the Omineca River.

**Major Systems:**

There are no major systems.

**Minor Systems:**

Inlet # 1 a - Unnamed Creek

Inlet # 1 a drains into Teegee Lake from the south (Plate # 6). There are four beaver dams located approximately 25 m (Plate # 7), 40 m, 60 m and 75 m upstream of the lake. The first dam is 1.3 m high and 60.0 m long. A small pond with a silt and organic bottom has formed behind the dam. Although water flowed over the top in some places, this dam was probably impassable to upstream fish movement at the time of the survey due to lack of enough flow over the top of the dam. The second dam is 0.5 m high and 6.0 m long. The third dam is located across two braids in the channel, with its two parts being 1.0 m high and 3.0 m wide, and 0.2 m high and 3.5 m high respectively. The fourth dam is 1.0 m high and 80 m long with a large pond behind it; this dam was probably impassable to upstream fish movement at the time of the survey due to lack of sufficient flow over the top of the dam. Approximately 170 m upstream of the lake, the channel is heavily braided through a patch of alders and willows; Inlet # lb breaks off from the channel at this point. Large and small gravels start to show in the creek substrate at this location. The braids converge again approximately 190 m upstream of the lake.

A Stream Survey card was filled out for a sample site located approximately 210 m upstream of the lake (Plate # 8 & # 9). In this location, the average wetted width is 4.5 m and the average riffle depth (65% of the creek) is 0.25 m. The substrate is mainly gravels (70%) and fines (30%). The creek morphology is mainly riffles (65%) and runs (30%) with a gradient of 3%. The water temperature was 4.5 °C at the time of the survey. For more information, refer to Appendix B.

**LAKE: Teegee Lake**

Inlet # lb - Unnamed Creek

Inlet # lb enters Teegee Lake on the south shore of the lake (Plate #10). The creek has a wetted width of 0.5 m and a depth of 0.4 m. The substrate is comprised of fines and organics. Approximately 20 m upstream of the lake, there is a 0.7 m high beaver dam that was probably impassable to upstream fish movement at the time of the survey due to lack of sufficient flow over the top of the dam. Approximately 100 m upstream, Inlet # lb joined with Inlet # la. Inlet # lb had no fisheries potential during the survey period.

Inlet # 2 - Unnamed Creek

Inlet # 2 enters Teegee Lake in the southwest corner of the lake (Plate # 11). The creek has an average wetted width of 0.7 m and depth of 0.4 m. There is lots of large woody debris fallen into / over the creek. The substrate is fines and organics that offers no spawning habitat. Approximately 50 m upstream of the lake, Inlet # 2 goes underground. Inlet # 2 had no fisheries potential during the survey period.

Inlets # 3 to # 5 - Unnamed Creeks

Inlet # 3 (Plate # 11) has an average wetted width of 2.0 m and depth of 0.3 m. There is lots of large woody debris fallen into / over the creek. The substrate is mainly fines and organics with a small amount of gravels that offered no spawning habitat. Inlet # 3 goes underground approximately 40 m upstream of the lake. Inlets # 4 and # 5 (Plate # 12) share common characteristics to Inlet # 3; their average wetted widths and depths are 0.5 m and 0.25 m, and 0.4 m and 0.1 m respectively. Both Inlets # 4 and # 5 go underground approximately 45 m upstream of the lake. Inlets # 3 - # 5 had no fisheries potential during the survey period.

Inlet # 6 - Unnamed Creek

Inlet # 6 enters Teegee Lake just to the south of the beaver hut found on the west side of the south bay of the lake (Plate # 13). Approximately 40 m upstream of the lake, there is a beaver dam 1.5 m high and 30 m long; because of the small amount of flow over the top of the dam, upstream fish movement was probably not possible at the time of survey. A second beaver dam, 2.0 m high and 60 m long, is located approximately 70 m upstream of the dam (Plate # 14). Upstream fish passage was impossible at the time of survey as the only downstream water flow was from seepage through the dam. These dams have created a series of silt and organic bottom ponds that are being used by ducks. A beaver hut is located in the pond behind the second beaver dam. There is no spawning habitat provided by Inlet # 6; however, the first 30 m upstream from the lake did provide good rearing habitat during the survey period.

**LAKE: Teegee Lake**

Inlets # 7 to # 9 - Unnamed Creeks

Inlets # 7 to # 9 enter Teegee Lake on the east side of the lake. All of these creeks are very narrow and shallow inlets that go underground approximately 4 m to 12 m upstream of the lake. None of these inlets offered any fisheries potential during the survey period.

Outlet - Unnamed Creek

The outlet drains Teegee Lake to the north. There is a dam located at the lake's edge that is 0.6 m high and 12 m long (Plate # 15); upstream fish movement was probably not possible at the time of survey due to low flow rates over the dam. The channel is heavily braided for approximately the first 90 m downstream of Teegee Lake, before the creek becomes restricted to one channel.

A Stream Survey card was completed for a sample site located approximately 100 m downstream of the lake (Plate # 16 & # 17). The average wetted width is 7.0 m, and the average riffle depth is 0.5 m at the time of survey (no pools in the survey site). Good rainbow trout spawning habitat is offered by the mainly gravels substrate (75%); fines (20%) and small cobble (5%) made up the remainder of the substrate. The creek morphology is comprised of riffles (70%) and runs (30%) with a gradient of 3%. Large organic debris, overhanging vegetation (alders and willows) and cutbanks provide some cover for fish in the creek. The water temperature was 10 °C at the time of the survey. For more information, refer to Appendix B.

**LAKE: Teegee Lake**

## FISHERIES MANAGEMENT COMMENTS

Teegee Lake sustains a population of rainbow trout, longnose suckers and lake chub, which could support a low use fishery. It should be noted however, that because the lake is so shallow, it was possible to visually locate swimming fish. The main spawning habitat for this lake is found in the outlet. The beaver dam located at the lake's edge on the outlet may hinder upstream fish passage after spawning for adult fish, and upstream movement for fry and juvenile fish at all times of the year. A partial breach in this dam to lower a section of it could provide better access to Teegee Lake for fish in the outlet creek. A small Forest Recreational Site could be built along the north shore of the lake near the outlet creek.

## HISTORY OF PREVIOUS SURVEYS

**Lake Surveys:**

None known.

**Other Related Studies:**

None known.

**LAKE: Teegee Lake**

**WATER CHEMISTRY SUMMARY** **Limnology Station No. 1**

**Field Conditions:**

| | | | |
|---|---|---|---|
| Date: | June 29, 1996 | | |
| Time: | 1210 hrs | Air Temperature: | 12.5 °C |
| Wind Velocity: | 5 - 10 km/h | Wind Direction: | from the NW |
| Cloud Cover: | 8 / 10 o.c. | Surface Conditions: | light ripple |
| Secchi Disc: | 5.45 m | Water Colour: | green / brown |

**Method Used:**

| | |
|---|---|
| Dissolved Oxygen: | YSI Model 57 Oxygen / Temperature Meter |
| Water Temperature: | YSI Model 57 Oxygen / Temperature Meter |
| Air Temperature: | Hand-Held Alcohol Thermometer |
| pH (field): | Digital pH Pocket Tester |
| H2S (field): | Hach H2S Field Test Kit |
| Laboratory Used: | Pacific Environmental Science Center |
| Water Sampler: | Vertical Alpha Water Bottle (Vandorn) |
| Metal Sampler: | By Hand; Preserved With 2.0 mL Nitric Acid |
| Substrate Sampler: | Substrate Sample Not Taken |

**Water Sample Chemistry:** **SEAM Site No.:** E223189

| | Sampling Depths | |
|---|---|---|
| | Surface (0.5 m) | Lower ( 9.0 m) |
| Alkalinity (lab) | 108 mg / L | 163 mg / L |
| Filterable Residue 105°C (lab) | 120mg / L | 180 mg / L |
| H2S (field) | N/A | 0.0 mg / L |
| Nitrogen - Total (lab) | 0.12mg / L | 0.75 mg / L |
| Non-Filterable Residue (lab) | < 5 mg / L | 14 mg / L |
| pH (field) | 8.6 | 8.0 |
| pH (lab) | 7.94 | 7.26 |
| Phosphorus - Total Dissolved (lab) | 0.009 mg / L | 0.022 mg / L |
| Specific Conductance (lab) | 203 µS / cm | 301 µS / cm |

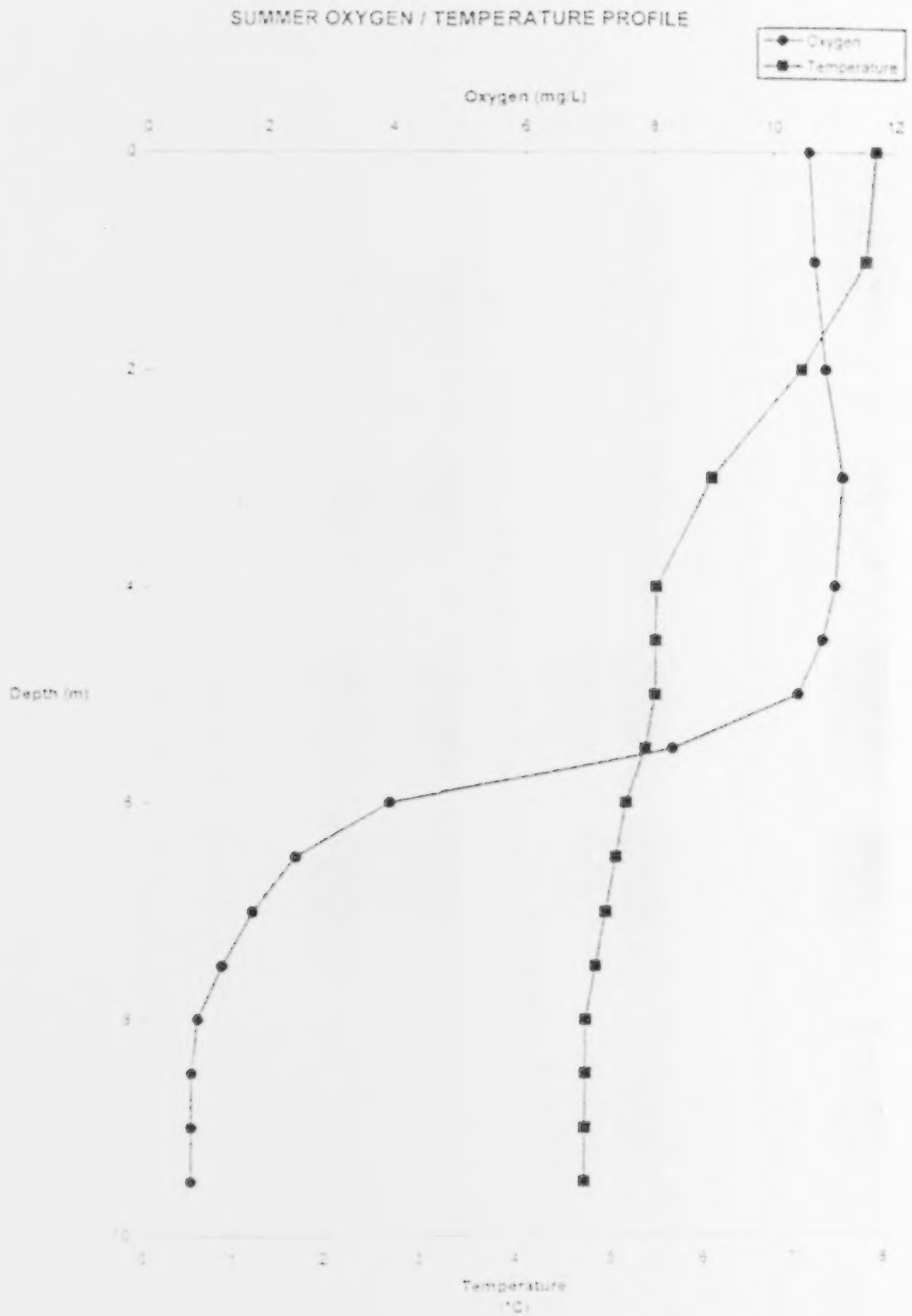
| | |
|---|---|
| Bottom Depth: | 10.0 m |
| Substrate Sample Depth: | N/A |

* additional analyzed parameters and results, including metals, are found in Appendix 1

**LAKE: Teegee Lake**

**SUMMER OXYGEN / TEMPERATURE DATA**

| DEPTH (m) | 02 (mg/L) | TEMPERATURE (°C) |
|---|---|---|
| Surface | 10.6 | 7.8 |
| 1.0 | 10.7 | 7.7 |
| 2.0 | 10.9 | 7.0 |
| 3.0 | 11.2 | 6.0 |
| 4.0 | 11.1 | 5.4 |
| 4.5 | 10.9 | 5.4 |
| 5.0 | *10.5* | 5.4 |
| 5.5 | 8.4 | 5.3 |
| 6.0 | 4.0 | 5.1 |
| 6.5 | 2.5 | 5.0 |
| 7.0 | 1.8 | 4.9 |
| 7.5 | 1.3 | 4.8 |
| 8.0 | 0.9 | 4.7 |
| 8.5 | 0.8 | 4.7 |
| 9.0 | 0.8 | 4.7 |
| 9.5 | 0.8 | 4.7 |
| 10.0 | Bottom | |


SUMMER OXYGEN / TEMPERATURE PROFILE
Oxygen
Temperature
Oxygen (mg/L)
0
2
4
6
8
10
12
Depth (m)
0
2
4
6
8
10
0
1
2
3
4
5
6
7
8
Temperature (°C)

**LAKE: Teegee Lake**

**NETTING RECORD**

Mesh Size Experimental Order: 25, 76, 51, 89, 38, 64 mm

NETTING SITE # 1

| | | | | |
|---|---|---|---|---|
| Type: | Sinking Monofilament Gill Net | | | |
| Date Set: | June 29, 1996 | | Time: | 0700 hrs |
| Date Lifted: | June 29, 1996 | | Time: | 1140 hrs |
| Net Dimensions: | Length: | 91.4 m | Depth: | 2.4 m |
| Shallow End Mesh Size: | 25 mm | | Depth: | 0.5 m |
| | | | Substrate: | silt / organics |
| Deep End Mesh Size: | 64 mm | | Depth: | 10.0 m |
| | | | Substrate: | silts |

Comments:

**LAKE CATCH SUMMARY**

| Species | Netting Site | Angled | Other | Total | Number | Number | Size Range |
|---|---|---|---|---|---|---|---|
| | No. 1 | | | | Sampled | Preserved | (cm) |
| RB | 36 | 2 | 0 | 38 | 30 | 0 | 13.6-37.7 |
| LNS | 6 | 0 | 0 | 6 | 0 | 0 | 18.0-26.8 |

**Minnow Traps:**

**Bait:** Sardines

| Trap No. | Hours | Depth (m) | Substrate | Species | No. Caught | Size Range (cm) |
|---|---|---|---|---|---|---|
| 1 | 5:52 | 0.7 | silt / organics | LKC | 18 | 4.0-6.4 |
| 2 | 5:52 | 0.5 | silt / organics | LKC | 141 | 4.0-8.9 |
| 3 | 6:00 | 0.6 | silt / organics | LNS<br>LKC | 11<br>83 | 7.7-10.8<br>4.5-9.5 |
| 4 | 6:00 | 0.6 | silt covered gravel | empty | 0 | N/A |

LAKE: Teegee Lake

## INDIVIDUAL FISH DATA

Date Captured: June 29, 1996

Method: Sinking Monofilament Gillnet

M - Male
F - Female
? - Not Obvious

IMM - Immature
MG - Maturing
MT - Mature
GV - Gravid
SP - Spent
? - Not Obvious

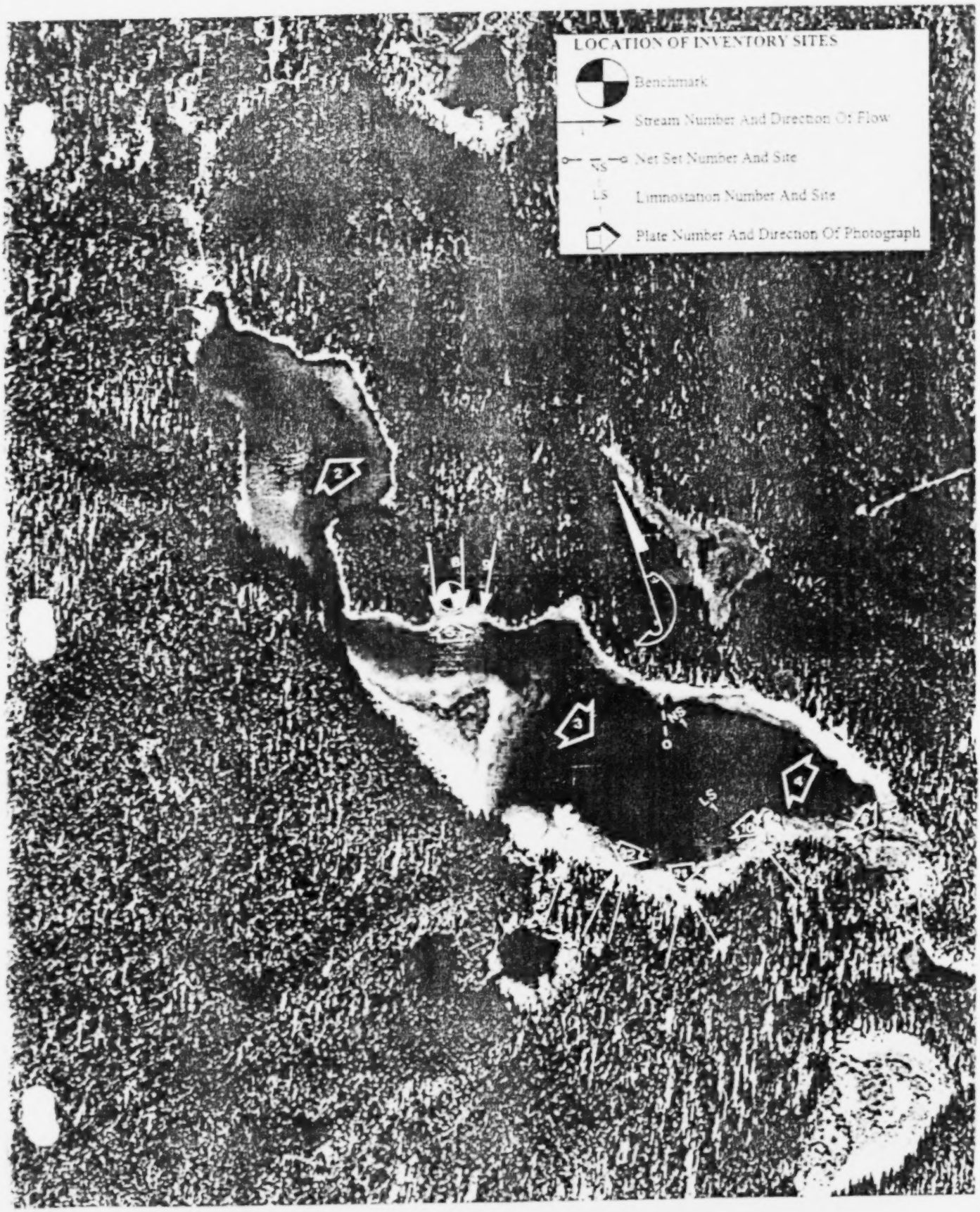
EG - Egg
FR - Fin Ray
HD - Head
ML - Milt
OT - Otolith
SC - Scale

| Species | Fork Length (cm) | Weight (grams) | Sex | Gonadal Maturity | Sample Type | Age (yr) | Stomach Contents: Plankton | Insect | Fish | Other | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| RB | 22.7 | 222.5 | F | Imm | SC | 3+ | unknown | | | | |
| RB | 30.9 | 300+ | F | Imm | SC | 3+ | | | | Sn | |
| RB | 34.5 | 300+ | F | Kelt | SC | 3+ | | WB | | | |
| RB | 31.8 | 300+ | M | Imm | SC | 4+ | | | | L | |
| RB | 29.1 | 300.9 | M | Imm | SC | 3+ | | Cr | | | |
| RB | 28.8 | 271.9 | M | Imm | SC | 4+ | | Cr | | | |
| RB | 37.7 | 271.8 | F | Kelt | SC | 4 | | G | | | |
| RB | 32.5 | 300+ | F | Imm | SC | 4+ | | | | empty | |
| RB | 31.2 | 300+ | M | Imm | SC | 4+ | | Cr | | Sn | |
| RB | 13.6 | 28.6 | M | Imm | SC | 2+ | | Cr | | | |
| RB | 29.5 | 300+ | M | Imm | SC | 4+ | | | | O | |
| RB | 31.5 | 300+ | M | Imm | SC | 4+ | | | | empty | |
| RB | 32.0 | 284.4 | F | Kelt | SC | 4+ | | | | empty | |
| RB | 26.9 | 239.9 | F | Imm | SC | 4+ | | | | Sn, O | |
| RB | 36.8 | 300+ | M | Imm | SC | 5+ | | | | empty | |
| RB | 28.5 | 251.5 | M | Imm | SC | 3+ | | | | O | TW on kidney |
| RB | 33.5 | 300+ | M | Imm | SC | 6+ | unknown | | | | |
| RB | 28.5 | 272.5 | F | Imm | SC | 3+ | | | | O | |
| RB | 32.9 | 300+ | F | Imm | SC | 4+ | | Di | | | |
| RB | 35.5 | 300+ | M | Imm | SC | 4+ | unknown | | | | Li on fins |
| RB | 30.5 | 300+ | F | Imm | SC | 4+ | | Cr | | | Li on gills |
| RB | 26.0 | 206.9 | M | Imm | SC | 3+ | | B | | | |
| RB | 28.1 | 262.2 | F | Imm | SC | 3+ | unknown | | | | Li on gills |
| RB | 28.7 | 260.4 | F | Imm | SC | 3+ | | Cr | | | Li on gills |
| RB | 27.3 | 232.4 | F | Imm | SC | 3+ | unknown | | | | Li on gills |
| RB | 31.6 | 300+ | F | Imm | SC | 5+* | | Cr | | | Li on gills |
| RB | 34.2 | 300+ | M | Imm | SC | 5+ | unknown | | | | Li on gills |
| RB | 26.4 | 203.3 | M | Imm | SC | 5+ | | | | empty | Li on gills |
| RB | 20.1 | 93.2 | M | Imm | SC | 2+ | | | | O | |
| RB | 31.0 | 300+ | F | Imm | SC | ** | | Cr | | Sn | Li on gills |

B - Beetle
C - Clams
CF - Caddis Fly
Ch - *Chaoborus*
Cr - Chironomids
Da - *Daphnia*
Di - Diptera
G - *Gammerus*
L - Leech
Li - Lice
O - Organics
S - Snails
St - Stomach
TP - Tape Worm
WB - Water Boatman
WF - Whole Fish

* center of scale regenerating - probably age 5+

** scale regenerated - not able to age


LOCATION OF INVENTORY SITES
Benchmark
Stream Number And Direction Of Flow
NS
Net Set Number And Site
LS
Limnostation Number And Site
Plate Number And Direction Of Photograph

**LAKE: Teegee Lake**

**PHOTOGRAPH DIRECTORY**

| Plate | Roll : Number | Description |
|---|---|---|
| 1 | 2:11 | Aerial view of Teegee Lake looking south. |
| 2 | 2: 21-23 | Panoramic view of the north bay of Teegee Lake looking northwest from the center of the north bay. |
| 3 | 2: 16-19 | Panoramic view of the south bay of Teegee Lake looking southeast from the center of the south bay. |
| 4 | 2: 15 | View of the south bay looking northwest from the bottom of the south bay. |
| 5 | 2: 14 | View of the benchmark located 2.0 m above the present water's level in a 23 cm diameter spruce that is 3 m from the present water's edge and located beside Inlet # 8. |
| 6 | 1: 15 | View of the mouth of Inlet # 1 a where it enters Teegee Lake in the southeast corner of the lake. |
| 7 | 1: 19 | Upstream view of beaver dam # 1 on Inlet # la, located approximately 25 m upstream of Teegee Lake. Dam height is 1.3 m. |
| 8 | 1: 20 | Upstream view of the sample site on Inlet # 1 a, taken approximately 200 m upstream of Teegee Lake. |
| 9 | 1: 21 | Downstream view of the sample site on Inlet # la, taken approximately 220 m upstream of Teegee Lake. |
| 10 | 1: 10 | View of the mouth of Inlet # lb where it enters Teegee Lake on the south shore of the lake. |
| 11 | 1: 9 | View of the mouths of Inlets # 2 & # 3 where they enter Teegee Lake in the southwest corner of the lake. |
| 12 | 1: 5 | View of the mouths of Inlets # 4 & # 5 where they enter Teegee Lake on the west side the south bay of the lake. |
| 13 | 1: 13 | View of the mouth of Inlet # 6 where it enters Teegee Lake on the west side of the south bay of the lake. |
| 14 | 1: 7 | Upstream view of beaver dam # 2 on Inlet # 6, located approximately 70 m upstream of Teegee Lake. Dam height is 2.0 m. |

**LAKE: Teegee Lake**

| | | |
|---|---|---|
| 15 | 1: 4 | Upstream view of beaver dam # 1 on the outlet, located at the mouth of the outlet. Dam height is 0.6 m. |
| 16 | 1: 1 | Upstream view of the sample site on the outlet, taken approximately 115 m downstream of Teegee Lake. |
| 17 | 1: 2 | Downstream view of the sample site on the outlet, taken approximately 90 m downstream of Teegee Lake. |

**LAKE: Teegee Lake**

**Plate # 1:** Aerial view of Teegee Lake looking south.

LAKE: Teegee Lake

**Plate # 2:** Panoramic view of Teegee Lake looking northwest from the center of the north bay.

LAKE: Teegee Lake

**Plate # 3:** Panoramic view of Teegee Lake looking southeast from the center of the south bay.

**Plate** # 4: View of the south bay looking northwest from the bottom of the south bay.

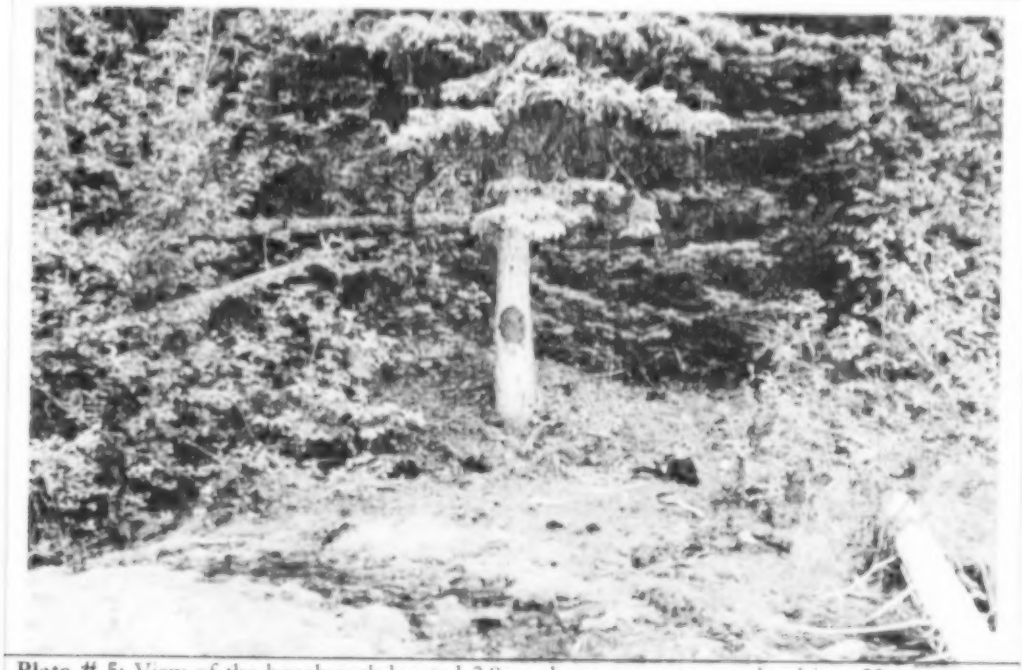


**Plate # 5:** View of the benchmark located 2.0 m above present water level in a 23 cm diameter spruce tree that is 3 m from the present water's edge and located beside Inlet # 8.

**Plate # 6:** View of the mouth of Inlet # 1a where it enters Teegee Lake in the southeast corner of the lake.

**Plate** # 7: Upstream view of beaver dam # I on Inlet # la, located approximately 25 m upstream of Teegee Lake. Dam height is 1.3 m.

**Plate # 8:** Upstream view of the sample site on Inlet # I a, located approximately 200 m upstream of Teegee Lake.

**Plate # 9:** Downstream view of the sample site on Inlet # 1a, located approximately 220 in upstream of Teegee Lake.

**Plate # 10:** View of the mouth of Inlet # lb where it enters Teegee Lake on the south shore of the lake.

**Plate # 11:** View of the mouths of Inlets # 2 and # 3 where they enter Teegee Lake in the southwest corner of the lake.

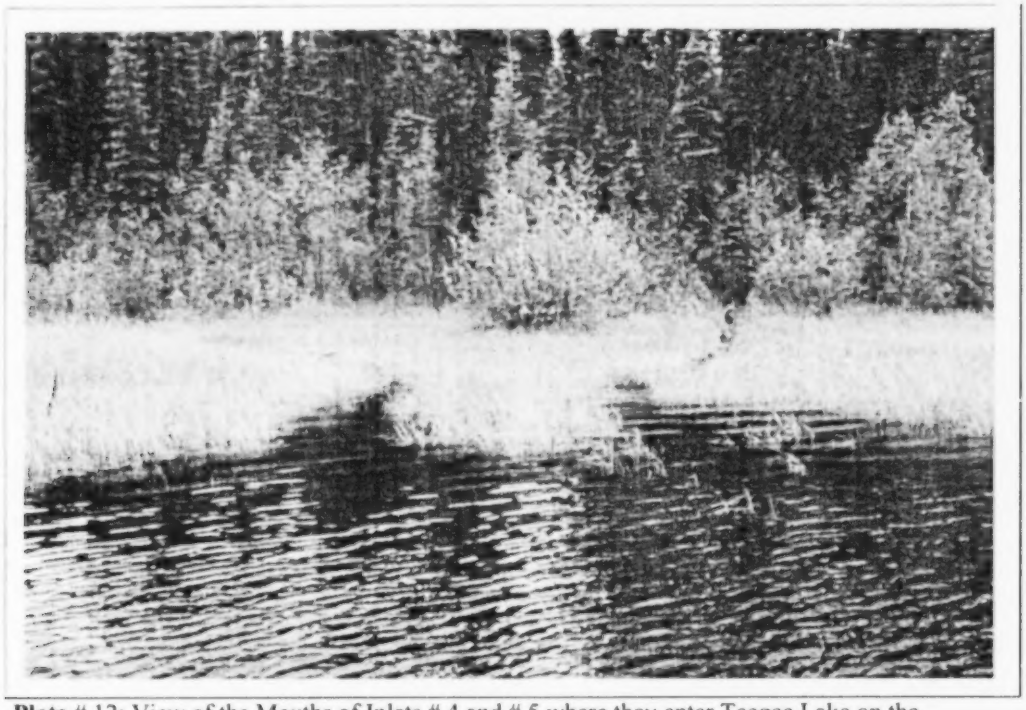


**Plate** # 12: View of the Mouths of Inlets # 4 and # 5 where they enter Teegee Lake on the west side of the south bay of the lake.

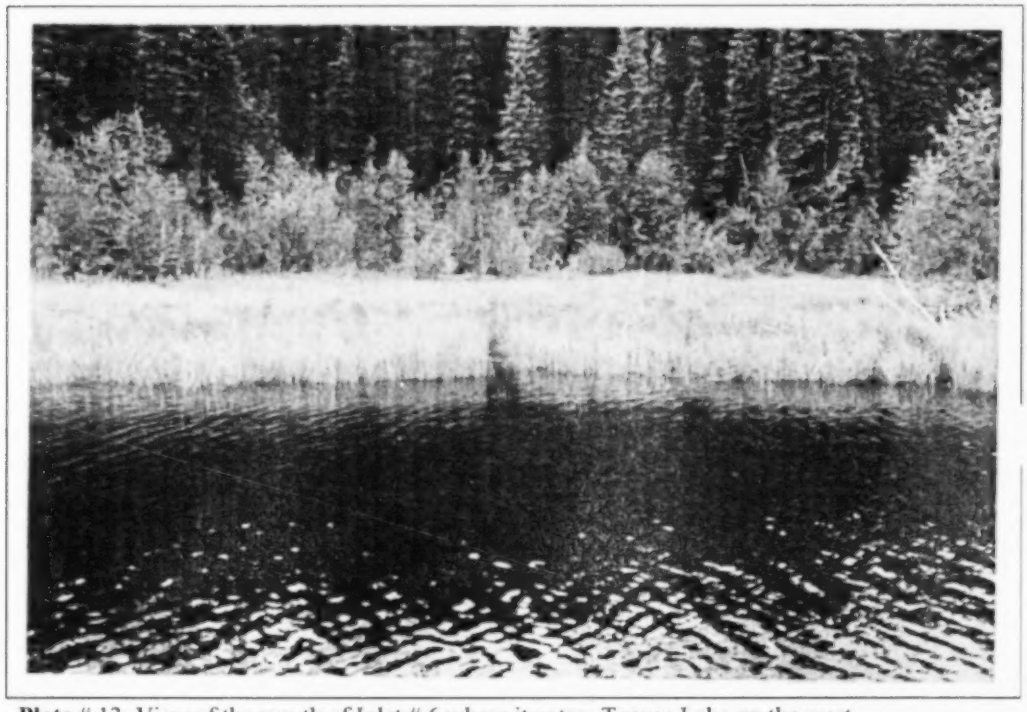


**Plate** # 13: View of the mouth of Inlet # 6 where it enters Teegee Lake on the west side of the south bay of the lake.

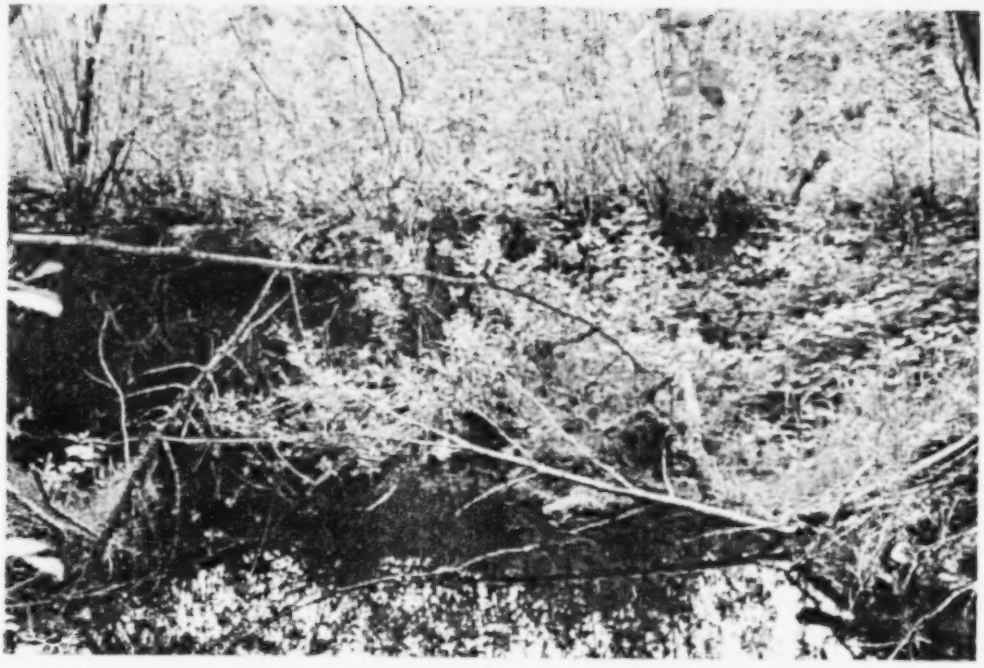


**Plate** # 14: Upstream view of beaver dam # 2 on Inlet # 6, located approximately 70 m upstream of Teegee Lake. Dam height is 2.0 m.

**Plate # 15:** Upstream view of beaver dam # 1 on the outlet, located at the mouth of the outlet. Dam height is 0.6 m.

**Plate # 16:** Upstream view of the sample site on the outlet, taken approximately 115 m downstream of Teegee Lake.

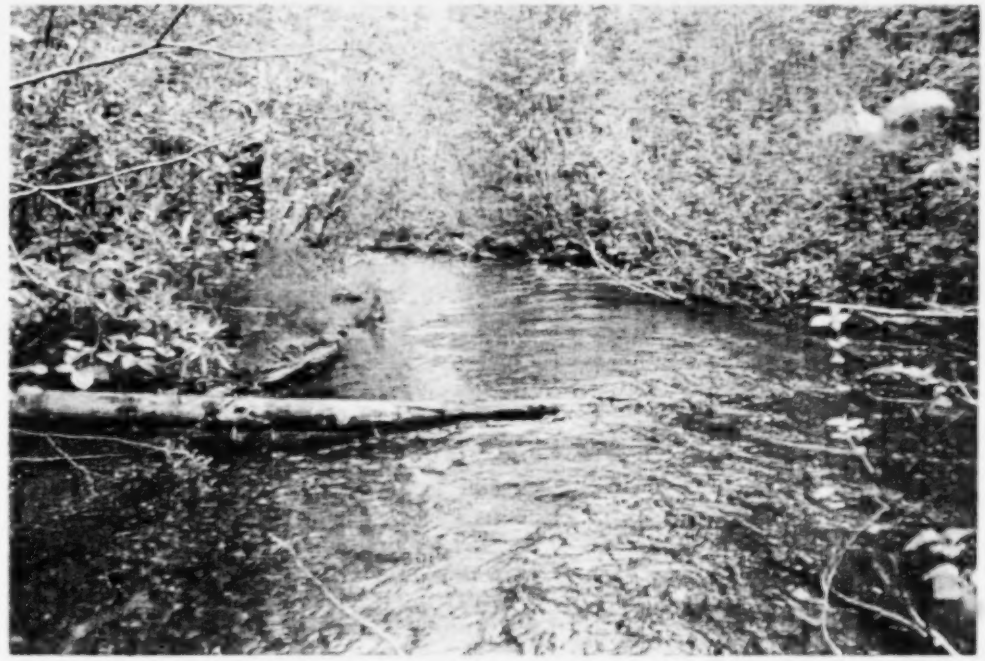


**Plate # 17:** Downstream view of the sample site on the outlet, taken approximately 90 m downstream of Teegee Lake.

# Appendix A

## LABORATORY REPORT

## Water Chemistry Analysis

RESULTS FOR UNNAMED LAKE #9 E223189 SAMPLES

| Parameter Analyzed | | Units | 96/06/29 0.5M 962508-001 | 96/06/29 9M 962508-002 |
|---|---|---|---|---|
| ALKALINITY | | mg/l | 108 | 163 |
| CONDUCTIVITY | | uS/cm | 203 | 301 |
| METALS/TOTAL (WATER-ICP) | AG | mg/l | <.01 | - |
| | AL | mg/l | <.06 | - |
| | AS | mg/l | <.06 | - |
| | B | mg/l | <.01 | - |
| | BA | mg/l | .044 | - |
| | BE | mg/l | <.001 | - |
| | CA | mg/l | 34.2 | - |
| | CD | mg/l | <.006 | - |
| | CO | mg/l | <.006 | - |
| | CR | mg/l | <.006 | - |
| | CU | mg/l | <.006 | - |
| | FE | mg/l | .07 | - |
| | K | mg/l | .3 | - |
| | MG | mg/l | 5.8 | - |
| | MN | mg/l | .005 | - |
| | MO | mg/l | <.01 | - |
| | NA | mg/l | .7 | - |
| | NI | mg/l | <.02 | - |
| | P | mg/l | <.1 | - |
| | PB | mg/l | <.06 | - |
| | SB | mg/l | <.06 | - |
| | SE | mg/l | <.06 | - |
| | SI | mg/l | 2.17 | - |
| | SN | mg/l | <.06 | - |
| | SR | mg/l | .097 | - |
| | TI | mg/l | <.002 | - |
| | V | mg/l | <.01 | - |
| | ZN | mg/l | .005 | - |
| NITROGEN/AMMONIA | | mg/l | .008 | .428 |
| /NITRITE | | mg/l | .002 | <.002 |
| /NITRITE+NITRATE | | mg/l | .028 | .003 |
| /TOTAL | | mg/l | .12 | .75 |
| PH | | Rel.U. | 7.94 | 7.26 |
| PHOSPHORUS/O-PO4 | | mg/l | <.001 | <.001 |
| /TOTAL | | mg/l | .014 | .041 |
| /TOTAL DISSOLVED | | mg/l | .009 | .022 |
| RESIDUE/FILTERABLE | | mg/l | 120 | 180 |
| /NON-FILTERABLE | | mg/l | <5 | 14 |

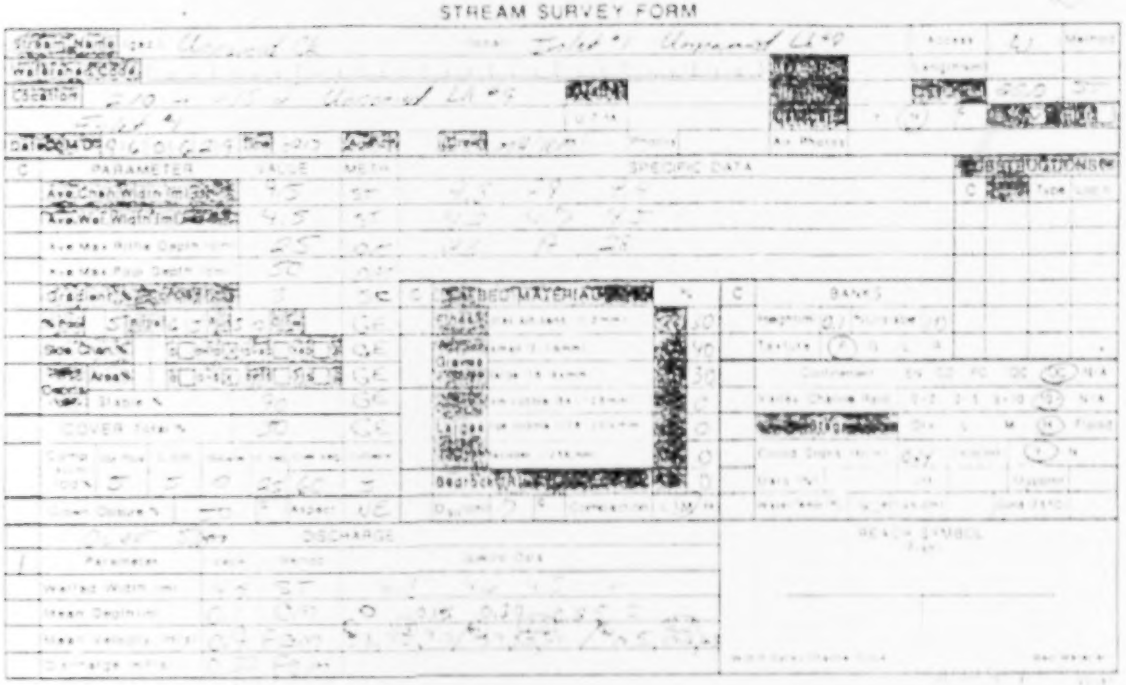
**Appendix B**

**Tributary Stream Data**

**D.F.O. / M.O.E. Stream Survey Form**

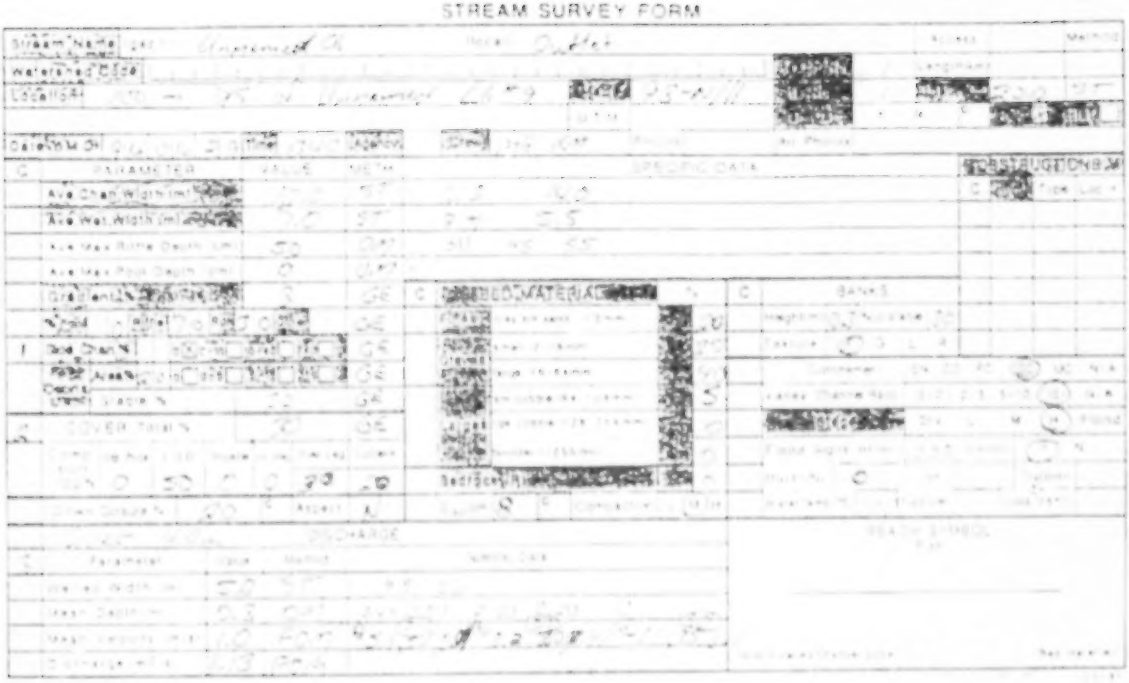
DFO / MOE

STREAM SURVEY FORM



DFO / MOE

STREAM SURVEY FORM



## Appendix C

## FISH SCALE ANALYSIS

Age Determination Completed By:

A.M.C. Technical Services Ltd.
Melinda M. Hirst
6809 Phillip Road.
Lantzville, B.C.
VOR 2H0

SEE ORIGINAL COPY

FOR SCALE SAMPLE READINGS

ORIGINAL COPY IS HELD BY

B. C. MINISTRY OF ENVIRONMENT, LANDS AND PARKS

PRINCE GEORGE, B. C.

# Appendix D

# BATHYMETRIC MAP

Reduced to
34%
of Original Size

STATISTICS AT TIME OF SURVEY

Teegee Lake